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Agricultural Memorandum No 815

Date of last spring and first autumn air frost in the United Kingdom and runs of days with air frosts.

Helen Beck

Data for 61 stations throughout the United Kingdom were extracted from the Climatological Daily (MAD) Tapes. The computer output listed the day, month and year on which a minimum air temperature of -0.1°C or less occurred. The dates of the last spring and first autumn frosts were tabulated and the number of days from 1st January of each frost was calculated for each year of the period available. As far as possible the period 1957-1975 was covered and a mean date and standard deviation were calculated for first and last frosts for the 19 years. Where a longer station record exists, the mean date and standard deviation for the whole period were also calculated to give a comparison. The results are tabulated in Appendix 1.

Runs of days with air frosts.

The output also contains a frequency table for each station, showing the length of run and the month in which it started. It should be noted that a run of 6 days, for instance, is not also counted as 2 runs of 5 days.

Appendix II contains the above mentioned tables for the long period stations only. The tables for the rest of the stations are available.

Any comments or suggestions on this paper should be referred to the author.

Meteorological Office
Bracknell

May 1977

APPENDIX II

Station Name: Aldergrove

Length of run (days)	Start of run Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1	25	28	36	43	7	2			6	15	19	34	215
2	32	18	22	13	6					2	26	25	144
3	7	10	8	3							12	7	47
4	8	9	7	2							4	8	38
5	4	2	4								2	5	17
6	3	3	3								1	2	12
7	2	3	2	1							1	1	10
8		3	1								1	1	6
9	1												1
10	4												4
11		1									1	2	4
12	1	1										1	3
13												1	1
14		4											4
15 or more	2												2

Station Name: Bradford

Length of run (days)	Start of run Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1	58	68	86	71	16				1	37	60	72	479
2	66	46	35	17	1					10	43	61	279
3	24	28	18	9						4	16	32	131
4	16	12	12	3							13	26	82
5	14	12	6	1							8	13	54
6	7	5	10								3	3	28
7	8	4	6	1							4	4	27
8	1	5	4	1								3	14
9	4	2	1								5	3	15
10	3	3											6
11	3	3											6
12	5	2	1										8
13	1												1
14	2	1									1	1	5
15 or more	7	5										2	14

Station Name: Cardiff

Length of run (days)	Start of run Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1	70	64	64	26	2				1	12	52	57	348
2	36	30	24	9						2	26	40	167
3	17	15	19							1	7	15	74
4	15	11	7	1							1	8	43
5	6	5	9								1	9	30
6	6	4	4								3	6	23
7	2	6									2	5	15
8	1	1	2										4
9	2	1	1										4
10	2	2											4
11	2	1											3
12	1											2	3
13	1												1
14		1											1
15 or more	2	5									1	1	9

Station Name — Cookle Park

Length of run (days)	Start of run Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1	58	44	61	50	24					16	52	48	353
2	42	28	29	17					1	3	26	35	181
3	13	18	13	10						1	9	23	87
4	11	12	3	10						1	8	11	56
5	7	10	3	4						1	3	11	39
6	5	5	1	1							1	4	17
7	3	1	4	1							3	4	16
8	2	3	3									1	9
9	4		1		1						1	4	11
10	1	2										2	5
11	2	3	1								1		7
12	1	3	2									2	8
13	2												2
14	2	1											3
15 or more	6	4	2									1	13

Station Name — Cranwell

Length of run (days)	Start of run Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1	43	40	54	42	12				1	18	46	53	309
2	41	33	30	20	4					8	25	38	199
3	15	18	17	7							16	9	82
4	15	13	11	1						1	1	15	57
5	6	10	8	1							5	12	42
6	6	4	2								3	8	23
7	7	5	2							1	3	5	23
8	5	3	1	1							2	3	15
9	3	4										4	11
10		2	3									1	6
11	3		2										5
12		1										1	2
13	1	1	1										3
14	1											1	2
15 or more	6	6										2	14

Station Name — Douglas

Length of run (days)	Start of run Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1	32	35	31	17						1	17	35	168
2	15	19	8	3							5	15	65
3	7	15	4								1	6	33
4	12	4	4									4	24
5		1	3								1	2	7
6	3	5											8
7	1	1	1										3
8	2	1											3
9	1	2											3
10	1												1
11													
12	1	2											3
13													
14													
15 or more		1											1

Station Name: Edgbaston

Length of run (days)	Start of run Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1	21	29	20	18	3					5	20	31	147
2	42	27	23	10							13	27	142
3	13	20	11	2						1	5	10	62
4	10	6	11	1							3	14	45
5	7	7	4									7	25
6	7	4	3							1	2	7	24
7	5	4	2								2	2	15
8	4	3	5								1	3	16
9	3	1	2									1	7
10	4	2										1	7
11		2	1										3
12	2											1	3
13												1	1
14	2	1											3
15 or more	3	4										1	8

Station Name: Elmdon

Length of run (days)	Start of run Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1	23	29	50	32	15	1			5	28	34	34	251
2	23	19	15	17	5					5	19	15	118
3	6	11	6	7	1					6	21	13	71
4	7	8	5	1						2	3	12	38
5	5	8	4	3							2	6	28
6	4	3	2	1							1	3	14
7	3	2	2								1	2	10
8	1	1	2								1	2	7
9		1	1								1		3
10	2		1										3
11	4	1	2									1	8
12													
13		1										1	2
14												1	1
15 or more	3	3										2	8

Station Name: Hastings

Length of run (days)	Start of run Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1	29	44	42	15						2	21	31	184
2	23	17	8	2							6	14	70
3	11	13	7								3	15	49
4	6	8	7								1	4	26
5	2	6	2									4	14
6	1		3									4	8
7	3		1										4
8	1	2									1	1	5
9	2	2										1	5
10													
11	3												3
12		1											1
13	2	1										1	4
14												2	2
15 or more	3	2											5

Station Name: Heathrow

Length of run (days)	Start of run Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1	29	32	29	22	1					10	27	38	188
2	23	23	12	6						3	18	18	103
3	7	13	4	2						2	9	10	47
4	8	8	5								4	5	30
5	5	3	5							1	4	12	30
6	4	2	2									1	9
7	3	2										3	8
8	1	1	3								1	2	8
9	3		2										5
10	2												2
11													
12													
13		2										1	3
14													
15 or more	2	1											3

Station Name: Ilfracombe

Length of run (days)	Start of run Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1	20	22	18	2							1	21	84
2	10	12	7									12	41
3	5	5	3									2	15
4	3	4										2	9
5		3	1									2	6
6	1											1	2
7	3	2										1	6
8	1												1
9													
10													
11	1												1
12													
13													
14		1											1
15 or more	1												1

Station Name: Mildenhall/Honington

Length of run (days)	Start of run Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1	27	36	34	28	8	2				9	28	27	199
2	22	25	14	13	1					1	20	22	118
3	11	10	5	10						4	14	9	63
4	7	11	4	1						1	3	8	35
5	6	3	4							1	2	9	25
6	3	3	5								1	3	15
7	2										1	2	5
8	2	1	4									4	11
9	2	1									1	1	5
10	3												3
11			3										3
12	1											1	2
13												1	1
14													
15 or more	1	3										1	5

Station Name: Morecambe

Length of run (days)	Start of run Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1	38	30	42	18	2					13	36	40	219
2	33	23	12	3							16	34	121
3	13	18	8							2	8	15	64
4	13	5	6	1							2	9	36
5	4	7	6								1	8	26
6	4	1	1								1	2	9
7	7	3	3								1	1	15
8	2	3									2	3	10
9	2	3											5
10	1	2									1		4
11	2	1										1	4
12		1											1
13													
14	2												2
15 or more	2	4											6

Station Name: Oxford

Length of run (days)	Start of run Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1	88	50	58	43	4					24	45	43	305
2	44	30	31	13	1					6	26	29	180
3	14	16	11	5	1					2	16	16	81
4	9	14	10							3	5	15	56
5	3	8	6								2	8	27
6	8	4	4								1	5	22
7	3	2	1									6	12
8	5	3	3								2	3	16
9	2	1											3
10	3		1										4
11	2	2	1								1	1	7
12	1											1	2
13	1	1										1	3
14													
15 or more	2	4										1	7

Station Name: Plymouth (Mount Batten)

Lenght of run (days)	Start of run Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1	33	33	35	12						4	23	20	160
2	19	27	18	6							16	33	119
3	19	14	7								4	11	55
4	6	9	3									5	23
5	3	6	5										14
6	5	2	2									6	15
7	1	2											3
8		1	1										2
9	1	1	1									2	5
10	1												1
11	1	1											2
12	1	1											2
13													
14													
15 or more	1												1

Station Name — Ringway

Length of run (days)	Start of run Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1	21	13	41	18	3					9	23	24	152
2	20	27	13	12	1					6	14	21	114
3	8	13	4	1						4	11	10	51
4	12	3	7	1							6	13	42
5	4	8	2	1							2	6	23
6	1	3	1									2	7
7	3	2	3									1	9
8	1		2								2	1	6
9	2	1	1								1	1	6
10		1											1
11		1											1
12												1	1
13													
14	1												1
15 or more	5	3										1	9

Station Name — Rothamsted

Length of run (days)	Start of run Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1	48	72	63	66	14				1	32	75	60	431
2	41	40	30	15	3					2	31	42	204
3	21	13	17	5	1					4	16	13	90
4	8	12	11	1						2	9	19	62
5	8	8	4	2							3	9	34
6	6	5	4								1	7	23
7	7	3	1									3	14
8	3	4	3	1							4	3	18
9	4	1	3									1	9
10	3	2										5	10
11	4	2	2									1	9
12		1										1	2
13	2											2	4
14	2	1											3
15 or more	3	8										2	13

Station Name — Waddington

Length of run (days)	Start of run Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1	27	30	34	20	1					11	27	31	181
2	20	18	17	18	2					3	17	22	117
3	14	10	4	3						2	9	7	49
4	6	10	6								2	7	31
5	2	7	5								2	8	24
6	5	3	2									3	13
7	1		2								2	3	8
8	2	2	1								2	4	11
9	2	2	2									1	7
10	2		1										3
11	1	1											2
12		1											1
13	1	1	1									1	4
14												1	1
15 or more	5	2										1	8

APPENDIX I

Station	Period	1957-1975 mean date of last frost	Standard Deviation	Long term mean date of last frost	Standard Deviation	Very latest frost	1957-1975 mean date of first frost	Standard Deviation	Long term mean date of first frost	Standard Deviation	Very earliest frost
Aberporth	1.1.57-31.12.75	19 March	23.18 days			15.4.66	6 December	28.55 days			4.11.68
Abingdon	1.1.57-31. 8.75	20 April	14.11 "			8.5.74	23 October	12.66 "			30. 9.69
Acklington	1.1.57-31. 9.75	5 May	17.94 "			4.6.75	1 November	13.53 "			27. 9.74
Aldergrove	1.1.49-31.12.75	29 April	18.05 "	2 May	19.22 days	15.6.56	29 October	17.54 "	28 October	20.30 days	7. 9.52
Benbecula	1.1.57-31.12.75	10 April	23.78 "			27.5.61	10 November	17.88 "			5.10.66
Boscombe Down	1.1.57-31.12.75	19 April	17.48 "			1.6.62	29 October	13.12 "			7.10.71
Bradford	1.1.08-31.12.75	7 April	15.49 "	16 April	18.61 "	11.5.55	8 November	10.40 "	3 November	13.86 "	12.10.73
Cardiff	1.1.13-31.12.75	29 March	20.94 "	30 March	19.47 "	17.5.35	22 November	30.90 "	17 November	25.26 "	10. 9.34
Cardington	1.1.57-31.12.75	12 May	17.62 "			7.6.69	20 October	14.96 "			26. 9.72
Chivenor	1.1.57-31. 8.74	18 March	23.58 "			13.4.58	22 November	20.62 "			20.10.72
Cockle Park	1.1.31-31.12.75	18 April	15.30 "	21 April	21.10 "	25.5.48	11 November	18.00 "	8 November	17.10 "	27. 9.54
Cranwell	1.1.31-31.12.75	11 April	18.74 "	17 April	19.02 "	21.5.31	8 November	10.87 "	5 November	16.87 "	22. 9.32
Douglas	1.1.31-31.12.75	15 March	27.34 "	15 March	28.39 "	30.4.45	14 December	32.28 "	16 December	28.09 "	17.10.55
Dyce	1.1.57-31.12.75	7 May	16.25 "			4.6.64	14 October	22.26 "			21. 8.73
Edgbaston	1.1.31-31.12.75	22 March	24.52 "	28 March	21.58 "	17.5.35	26 November	16.63 "	22 November	18.10 "	22.10.31
Elmdon	1.1.50-31.12.75	6 May	15.21 "	5 May	16.35 "	1.6.62	17 October	17.92 "	17 October	15.77 "	16. 9.75
Eskdalemuir	1.1.57-31.12.75	22 May	22.16 "			28.6.74	25 September	20.55 "			20. 8.64
Exeter	1.1.57-31.12.75	13 April	17.72 "			20.5.65	5 November	18.72 "			13.10.60
											13.10.64
Filton	"	11 April	17.14 "			3.5.67	3 November	12.72 "			13.10.74
Finningley	1.1.58-31.12.75	9 April	21.31 "			16.5.73	31 October	18.85 "			16. 9.75
Gorleston	1.1.57-31.12.75	17 March	19.46 "			28.4.70	2 December	31.23 "			10.11.68
Hastings	1.1.31-31.12.75	15 March	22.30 "	17 March	20.48 "	25.4.50	8 December	29.55 "	5 December	25.59 "	26.10.39
Heathrow	1.1.49-31.12.75	3 April	18.20 "	5 April	16.47 "	3.5.67	8 November	10.41 "	6 November	14.61 "	11.10.52
Hurn	1.1.57-31.12.75	28 April	14.50 "			28.5.61	20 October	14.20 "			22. 9.62
Ilfracombe	1.1.31-31.12.75	22 February	29.67 "	24 February	25.04 "	14.4.68	3 January	19.91 "	6 January	25.04 "	29.11.49
Kew (NWS)	1.1.57-31.12.75	23 March	18.95 "			3.5.67	20 November	25.48 "			13.10.64
Kinloss	"	30 April	16.56 "			2.6.75	16 October	19.35 "			9. 9.72
Kirkwall	"	13 April	26.79 "			31.5.62 31.5.65	24 November	23.30 "			13.10.71
Lerwick	"	16 April	20.68 "			18.5.67	7 November	21.52 "			2.10.69
Leuchars	"	22 April	20.44 "			27.5.61	26 October	16.62 "			27.9.74 27.9.75
Manby	1.1.57-31.5.74	15 April	22.05 "			30.5.62	14 November	20.11 "			11.10.64
Marham	1.1.57-31.12.75	19 April	18.18 "			3.6.62	1 November	23.17 "			1.10.74
Mildenhall/	1.1.49-31.12.69	17 April	20.89 "	21 April	20.20 "	3.6.62	6 November	14.05 "	5 November	16.65 "	30. 9.69
Honington	1.1.70-31.12.75										
Morecambe	1.1.31-31.12.75	16 March	20.92 "	22 March	20.64 "	8.5.32	14 November	12.87 "	13 November	16.44 "	13.10.60
Oxford	"	3 April	15.85 "	10 April	17.85 "	18.5.35	6 November	12.34 "	5 November	16.16 "	11.10.52
Pershore	1.11.57-31.12.75	1 May	20.46 "			1.6.62	20 October	16.15 "			16.9. 75
Plymouth MB	1.1.31-31.12.75	19 March	21.28 "	19 March	20.50 "	1.5.45 31.5.62	3 December	30.51 "	2 December	27.70 "	18.10.55
Prestwick	1.1.57-31.12.75	23 April	26.43 "			31.5.75	22 October	20.81 "			9.9. 72
Rhoose	"	3 April	20.69 "			3.5.67	14 November	12.34 "			24.10.64
Ringway	1.1.49-31.12.75	8 April	16.72 "	12 April	17.32 "	11.5.51 11.5.55	5 November	10.33 "	2 November	11.71 "	8.10.52
Ronaldsway	1.1.57-31.12.75	2 April	24.77 "			3.5.67	16 November	15.47 "			21.10.72
Rothamsted	1.1.31-31.12.75	17 April	21.88 "	21 April	18.61 "	31.5.75	1 November	13.95 "	30 October	11.13 "	30. 9.69
St Abb's Head	1.1.57-31.12.75	22 February	24.04 "			29.4.73	28 November	20.45 "			11.11.59 11.11.66
St Mawgan	"	18 March	21.16 "			12.4.58	10 December	29.38 "			3. 11.66
Scilly	"										
Shawbury	"	4 May	17.07 "			4.6.75	20 October	16.34 "			16. 9.75
S Farnborough	1.1.57-31. 8.75	28 April	15.07 "			31.5.75	24 October	13.96 "			30. 9.69
Speke	1.1.57-31.12.75	28 March	23.66 "			3.5.67	12 November	13.09 "			18.10.75
Squires Gate	"	24 April	24.18 "			1.6.62	30 October	16.06 "			21. 9.64
Stornoway	"	2 April	16.29 "			27.5.61	31 October	19.17 "			21. 9.64
Thorney Island	"	4 April	18.11 "			3.5.67	16 November	10.49 "			31.10.74
Tiree	"	27 March	20.29 "			30.4.73	23 November	26.38 "			13.10.71
Turnhouse	"	1 May	14.83 "			31.5.75	16 October	15.45 "			21. 9.64
Tynemouth	"	18 March	25.34 "			29.4.73	24 November	13.89 "			11.11.66
Valley	"	22 March	22.48 "			21.5.65	25 November	16.75 "			24.10.64

APPENDIX I (cont'd)

Station	Period	1957–1975 mean date of last frost	Standard Deviation	Long term mean date of last frost	Standard Deviation	Very Latest frost	1957–1975 mean date of first frost	Standard Deviation	Long term mean date of first frost	Standard Deviation	Very earliest frost
Waddington	1.1.49–31.12.75	9 April	17.64 days	12 April	17.20 days	11.5.55	8 November	15.14 days	5 November	14.66 days	4.10.72
Watnall	1.1.57–31.12.75	11 April	21.12 "			19.5.65	8 November	11.25 "			18.10.73
Wick	"	4 May	19.51 "			4.6.75	27 October	19.47 "			9.9.72
Wittering	"	6 April	16.15 "			3.5.67	8 November	11.08 "			11.10.64
Wyton	"	13 April	17.60 "			8.5.57	6 November	13.83 "			4.10.72
York	1.1.58–31.12.75	8 April	20.44 "			3.5.67	4 November	18.56 "			29.9.74